Remarks

By this paper, claims 1, 11, and 22 have been amended, and claims 4 and 15 have been canceled. Claims 1-3, 5-14, and 16-23 are now pending in the present application. Applicants respectfully request reconsideration of the pending claims in view of the following remarks.

1.   Applicants' specification is enabling and satisfies the "written description" requirement.

(a)   Enablement Rejection

In the Office Action, the Examiner rejected claims 1-23 under 35 U.S.C. §112(1) as non-enabling because, as stated on page 2, "[a]pplicant has not provided an enabling disclosure as to how to generate the computer model." In alleging that "[t]he specification does not indicate how a model would arise from the input data", the Examiner concluded that "it would take undue experimentation to sift through the infinity of possible inputs and their possible relationships before one of ordinary skill could arrive at Applicant's undisclosed method of generating a model" (pg. 2-3).

Applicants respectfully disagree. The disclosure in the present application provides sufficient guidance to teach a skilled artisan to generate a computer model. Applicants' specification states: "[i]n accordance with a preferred embodiment of the present invention, the computer system is operably configured to execute a software application for performing integrated simulations. **One such application is SIMUL8 and is available from SIMUL8 Corporation, 2214 Rock Hill Road, Suite 501, Herndon, VA 20170**" (5:25-30, with emphasis). Hence, a person having ordinary skill in the art would recognize that SIMUL8, and possibly other software programs, could be used to generate a model as described in the disclosure.

In terms of generating such a model, the Examiner alleges on page 2 that "Applicant merely provides examples of various input data (see e.g. specification at Tables 1 and 2)" and that "[Applicants'] Figure 1 seems to indicate a model showing the flow of actions in a service shop, but does not indicate how to generate a model."

Applicants respectfully disagree. As noted in Applicants' specification, "Figure 1 is a block flow diagram by service department location illustrating a preferred simulation model workflow" (4:30-32). The block flow diagram includes multiple steps, ranging from 100-134. Following a discussion of exemplary input parameters (Table 1) and distributions (Table 2), the specification describes the steps in the flow diagram with reference to these input parameters and distributions. For the purpose of explanation, part of Table 2, along with an excerpt from Applicants' specification is provided below:

DISTRIBUTIONS	TYPE
Arrivals - Early Morning	Exponential
Arrivals - Late Morning	Exponential
Arrivals - Afternoon	Exponential

TABLE 2 (in-part)

"At step 102, the model generates new customers. In one embodiment of the present invention, new customers are represented by a repair order. In accordance with this embodiment, repair orders may be generated according to a five-step process. The **first step** involves selecting an appropriate inter-arrival time distribution function **(e.g., arrivals - early morning; arrivals - late morning; arrivals - afternoon, etc.)** based upon a time of day. The **second step** may involve generating a random number between 0 and 1 (e.g., 0.6457). The **third step** may involve obtaining an inter-arrival time associated with a cumulative probability equal to the random number generated in step 2 from the inter-arrival time distribution selected in step 1. The **fourth step** may involve generating a new customer at the current model time of day plus the inter-arrival time obtained in step 3. The **fifth step** may involve repeating steps 1 through 4 when the model time of day advances to the value calculated in step 4." (8:4-21, with emphasis)

Here, step 102 is exemplarily described with reference to a specific five-step process. In terms of how to implement these steps, it is noted in 2:19-21 of Applicants' specification that "[s]oftware applications currently exist for . . . performing integrated simulations." Quoting *In re Buchner*, "[a] patent **need not teach**, and preferably omits, what is well known in the art" (929 F. 2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991), with emphasis). Moreover, "[t]he test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent application **coupled with information known in the art**" (*United States v. Telectronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988)). Here, using a software program to simulate a model is well-known to, and well within the ability of, a person having ordinary skill in the art. With exemplary reference to step 102, a skilled artisan would readily recognize how to use a software program (*e.g.*, SIMUL8) to implement the described five-step process (*e.g.*, selecting a distribution function, generating a random number, *etc.*).

In lieu of reiterating this reasoning for each step shown in Figure 1 and unduly replicating a majority of the specification here, it should be noted that this reasoning applies to the various other steps in Figure 1; namely, the specification sufficiently discloses each step to enable a skilled artisan to make and use the invention. The reasoning above applies to each of claims 1-23. Therefore, Applicants respectfully request that the Examiner withdraw the "enablement" rejection as applied to claims 1-23.

(b)   Written Description Rejection

The Examiner rejected claims 1-23 under 35 U.S.C. §112(1) as failing to comply with the written description requirement. Stating on page 4 that "Applicant has not written any steps related to generating a model , the Examiner concluded that "Applicant has not provided sufficient written description . . . to convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

However, as noted in section 1(a) above, Applicants have provided sufficient disclosure for how to generate a model (e.g., the five-step process for step 102). Applicants therefore respectfully request that the Examiner withdraw the "written description" rejection as applied to claims 1-23.

2.   Applicants' claims 1, 11, and 22 are patentable under 35 U.S.C. §103(a) over Golighty because Golighty does not teach probabilistic models and teaches away from statistical models.

In the Office Action, the Examiner rejected claims 1-23 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Publication 2003/0046130 to Golightly *et al.* (hereforth "Golightly"). Independent claims 1, 11, and 22 have each been amended to include the limitation "wherein the model utilizes probability to account for uncertainty in at least a portion of the input data." Dependent claims 4 and 15, which had previously recited these limitations, have been canceled. Focus is now given to the rejection to claim 4.

The Examiner rejected claim 4, stating on page 8 that "Golightly discloses the model utiliz[ing] probability to account for uncertainty in at least a portion of the input data (see ¶ 19, noting that using probability in models is well known)." Paragraphs 19-23 of Golightly have been reproduced below:

> [0019] Computer-based statistical models may sometimes predict product properties which may not be well described by computer fundamental models. **However, there may be significant problems associated with computer statistical models**, which include the following:
>
> [0020] (1) Computer statistical models require a good design of the model relationships (i.e., the equations) or the predictions may be poor;
>
> [0021] (2) Statistical methods used to adjust the constants typically may be difficult to use;
>
> [0022] (3) Good adjustment of the constants may not always be achieved in such statistical models; and

[0023] (4) As is the case with fundamental models, the number of skilled
statistical model builders is limited, and thus the cost of creating and
maintaining such statistical models is high.

As shown above, Golightly does not disclose probabilistic models, expressly
or inherently. Moreover, even if Golightly did disclose probabilistic models, for example,
in place of statistical models, Golightly teaches away from statistical models. As provided
above, Golightly states in para. 19 that "there may be significant problems associated with
computer statistical models" and proceeds to enumerate several reasons in para. 20-23 as to
the sorts of problems faced by statistical models. "[W]hen the prior art teaches away from
combining certain known elements, discovery of a successful means of combining them is
more likely to be nonobvious." *KSR* at 1395, citing *United States v. Adams*, 383 U.S. 39,
50-52.

The Examiner relies only on Golightly to teach the limitation "wherein the
model utilizes probability to account for uncertainty in at least a portion of the input data",
which is now part of independent claims 1, 11, and 22 and the remaining pending claims by
dependency. Therefore, Applicants respectfully request that the Examiner withdraw the 35
U.S.C. §103(a) rejection as applied to claims 1-23.

<u>Conclusion</u>

Applicants have made a genuine effort to respond to the Examiner's objections and rejections in advancing the prosecution of this case. Applicants believe all formal and substantive requirements for patentability have been met and that this case is in condition for allowance, which action is respectfully requested.

The fee in the amount of $1050.00 to cover the Petition fee is being electronically filed herewith. Please charge any other fees or credit any overpayments as a result of the filing of this paper to our Deposit Account No. 02-3978.

The Examiner is invited to contact the undersigned to discuss any aspect of this case.

Respectfully submitted,
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